DOCUMENT RESUME

ED 074 922 HE 003 893

AUTHOR	Ericksen, Stanford C., Ed.
TITLE	Development and Experiment in College Teaching.
INSTITUTION	Committee on Institutional Cooperation.
REPORT NO	R-8
PUB DATE	72
NOTE	62p.
AVAILABLE FROM	Stanford C. Ericksen, Director, Center for Research on Learning and Teaching, 109 E. Madison Street, Ann Arbor, Michigan 48104 ($.50)
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*College Faculty; Educational Change; *Educational Improvement; *Higher Education; Professors; *Teacher Improvement; *Teaching Methods

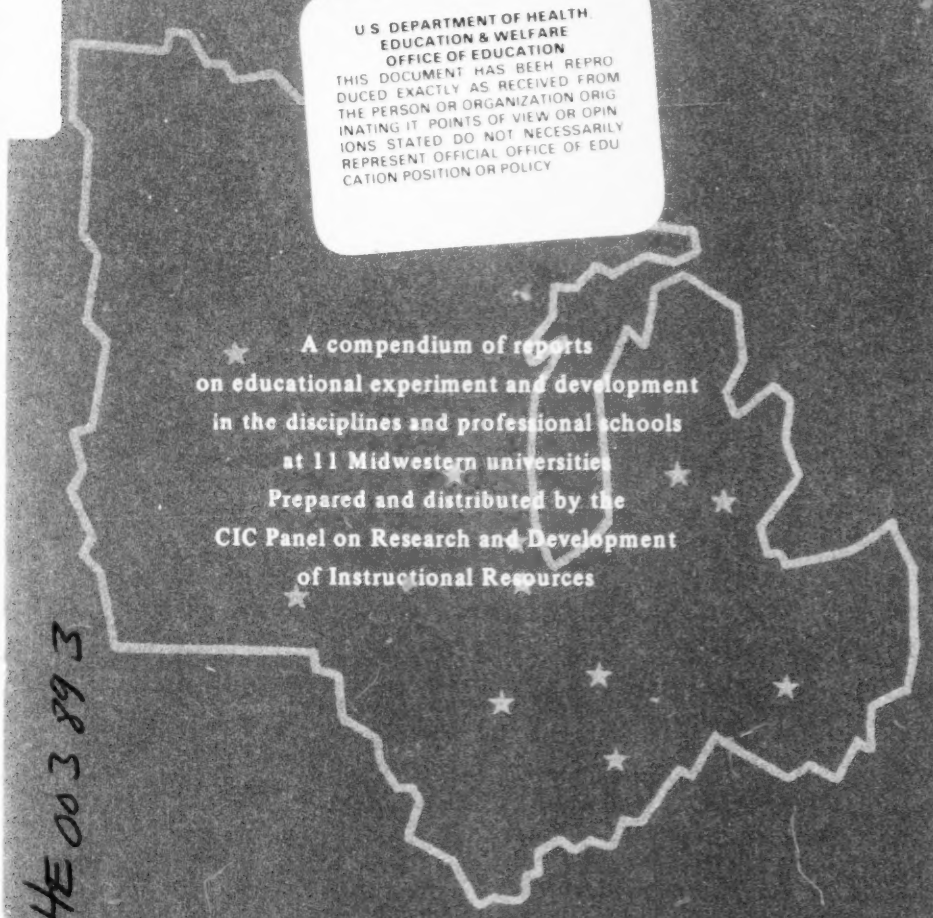
ABSTRACT

This report comprises a collection of summaries of exploratory efforts by college professors at member institutions of the Committee on Institutional Cooperation (CIC) to develop new and better ways of teaching. Usually these are local experiments aimed at improving the conditions for learning in a specific subject-matter area, but many of the procedures can easily be generalized for application in other departments, or they may stimulate the search for fresh alternatives. The substantive entries in Section I, Subject-Matter Areas, is of particular interest to classroom teachers. Section II, University-Wide Activities, includes descriptions of institutional facilities, instructional media arrangements, and broad programs that span the disciplines. Section III is the cumulative index to all 8 published reports by subject area, and Section IV is a cumulative index by categories. (Author/HS)

ED 074922

Development and Experiment In College Teaching

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY



A compendium of reports
on educational experiment and development
in the disciplines and professional schools
at 11 Midwestern universities
Prepared and distributed by the
CIC Panel on Research and Development
of Instructional Resources

HE 003 893

REPORT No. 8 SPRING 1972

FILMED FROM BEST AVAILABLE COPY

The Committee on Institutional Cooperation (CIC) was established in 1959 by the Big Ten Universities and the University of Chicago to facilitate pooling of resources and talents on matters of mutual concern in higher education.

Development and Experiment in College Teaching

No. 8
Spring 1972

Prepared and distributed
by the CIC Panel on Research
and Development of Instructional
Resources

Foreword

This report comprises a collection of summaries of exploratory efforts by college professors at CIC institutions to develop new and better ways of teaching. Usually these are local experiments aimed at improving the conditions for learning in a specific subject-matter area, but many of the procedures can easily be generalized for application in other departments, or they may stimulate the search for fresh alternatives. This report will serve its purpose if it provides a useful exchange of information between college teachers and administrators.

The substantive entries in Section I: Subject-Matter Areas, will be of particular interest to classroom teachers. Section II: University-Wide Activities, includes descriptions of institutional facilities, instructional media arrangements, and broad programs which span the disciplines. Section III is the cumulative index to all eight published reports by subject area. Section IV is a cumulative index by categories.

Copies of all reports are available free of charge to faculty of CIC institutions and should be requested directly from institution representatives (see p. iv). To all others who are interested, copies are available from the address below at a cost of $.50 each to cover mailing and handling expenses.

COMMENTS AND REQUESTS FOR COPIES
of this report are encouraged by your university representative

or write to:

Stanford C. Ericksen, Director
Center for Research on Learning and Teaching
109 E. Madison Street
Ann Arbor, Michigan 48104

Professor Ericksen is chairman of the CIC Panel on Research and Development of Instructional Resources and editor of these Reports.

University Representatives
Panel on Research and Development
of Instructional Resources

These people also serve as the Board of Editors of this Report.

University of Chicago
No representative

University of Illinois
Charles J. McIntyre, Director
Office of Instructional Resources

Indiana University
K. Gene Faris
Associate Dean for Academic Affairs

University of Iowa
William Oglesby, Director
Audiovisual Center

University of Michigan
Stanford C. Ericksen, Director
Center for Research on Learning and Teaching

Michigan State University
Robert H. Davis, Director
Educational Development Program and
Instructional Development Service

University of Minnesota
Russell W. Burris, Executive Officer
Center for Research in Human Learning

Northwestern University
B. Claude Mathis, Director
Center for the Teaching Professions

Ohio State University
George P. Crepeau
Assistant Vice President for Curricula

Purdue University
Don. L. Tolliver, Head
Instructional Media Research Unit

University of Wisconsin
Robert E. Hoye, Director
Instructional Media Laboratory (Milwaukee)

Contents

Foreword iii
University Representatives iv

1. SUBJECT-MATTER AREA

ART HISTORY

Self-Paced Modular Units 3

BIOLOGY

Self-instructional Mini-courses 4

BUSINESS ADMINISTRATION

Audio Tutorial Decision Theory 4

Simulating Financial Decision-Making Processes 5

Marketing and Political Action 6

DENTISTRY

Audiovisual and CAI Programming in Dental Materials and Dental Hygiene 6

ECONOMICS

Computer Test Scoring and Analysis 7

EDUCATION

A Self-instruction Lab for the Operation of AV Equipment and Production of Simple Instructional Materials 8

A Competency Based Reading Instruction Course 9

Improvement of College Instruction in the School of Agriculture 9

ENGINEERING

Oral Exams and Varied Scheduling 10

Team Teaching in Short Blocks 11

Technology and Society 11

ENGLISH

Full-Length Feature-Film Adaptations to Stimulate and Improve Reading of Required Texts and Expository Writing 12

New Approaches to Poetry and Literary Study 13

HISTORY

Discussion Groups in Large Intermediate-level History Courses 14

Development of Options in a History Course 15

LANGUAGE

A New German Grammar 16

Hebrew Language Study with a Programmed Text and Tape 17

LAW

Clinical Training in Law 18

LIBRARY SCIENCE

Realism in Teaching Reference Work 19

MEDICINE

Integrated Premedical-Medical Program 19

MUSIC

CAI for Music Theory 20

An Electronic Piano Laboratory for Piano Pedagogy 21

NURSING EDUCATION

Curricular Flexibility in Nursing Education 22

PHARMACY

Cassette Tapes for an Extension Course 22

POLITICAL SCIENCE

Using Multi-Media in a Large Enrollment Course 23

PSYCHOLOGY

Computer Simulations for Teaching Research Design in Elementary Experimental Psychology 24

Videotapes Combined with Discussions 24

A Test Item Pool Designed to Stimulate and Measure Creative Thinking in Psychology 25

SOCIAL WORK

Self-Instruction Slide/Tape Presentations to Introduce Social Work Students to Community Services 26

II. UNIVERSITY-WIDE ACTIVITIES

ADMINISTRATION, ACADEMIC FACILITIES

University of Wisconsin Undergraduate Teaching Improvement Fund 29

An Experimenting College 30

INTERDISCIPLINARY PROGRAMS

Course Mart 31

MEASUREMENT AND EVALUATION

Computer Generated Repeatable Testing for Large University Classes 32

TEACHING ASSISTANTS

Residence Hall Training Program 33

III. CUMULATIVE INDEX BY SUBJECT-MATTER 37

IV. CUMULATIVE INDEX BY CATEGORY 49

I. Subject-Matter Area

ART HISTORY

Self-Paced Modular Units

The development of a new approach to the teaching of art history reported here a year ago (CIC Report #7, p. 3) has continued under the joint sponsorship of the Department of Art History and the Center for Human Learning at the University of Minnesota.

An initial effort was to analyze the structure of knowledge in art history, and to identify the basic skills which experts in this field demonstrate. A learning problem connected with the traditional teaching methods in art history has been the great variation in students' abilities to relate visual perception and verbal explanation, and to relate perception of the whole to analysis of its parts. Memorizing names, dates, and other facts cannot compensate for this basic understanding, which has seldom been taught.

Under the new system course material in the introductory survey course (450 students) is presented through printed outlines and reading assignments, tapes linked with slides, lectures, and discussions. The modular learning units are built around the basic constitutents of the discipline rather than around its specific subject areas, so that they may be used in other combinations in different situations. The student may work at his own pace and must demonstrate skill in each area before he moves to the next one. Thus evaluation goes hand in hand with progress. The new plan requires the individual student to become involved actively in learning; faculty time is freed for more personal interaction with students than was formerly possible; and the evaluation process helps students progress in developing skills.

Student reaction and performance on the material thus far has been quite successful. Further research and development is continuing, along with evaluation by students, faculty, experts in the discipline, and staff from the Center for Human Learning. An Annual Conference is planned with prominent scholars and educators in art history from other campuses focusing on the definition of competence in the field and how students can best acquire it.

For more complete information and data on this program write: Mrs. Elaine Parent, Center for Research in Human Learning, 400 Ford Hall, University of Minnesota, Minneapolis, Minnesota 55455.

BIOLOGY

Self-instructional Mini-courses

A team of instructional developers at Purdue University is preparing "mini-courses" for a Core Program in undergraduate biology. As the name implies, a mini-course is a short course usually requiring one or two hours of student time to complete. Each mini-course is accompanied by a statement of objectives, study guide, and suggested test items. The materials and media provided include tangible items, printed materials, projected 2 x 2 slides and films, and audio tapes. The mini-courses are self-instructional, allowing each student to proceed at his own rate, but an instructor usually will be available to answer questions.

The mini-courses are subjected to three levels of evaluation by students and teachers which usually result in revision and retesting. The first level is Developmental Testing in which a few students go through the materials and provide feedback directly to the developer. Next, each mini-course undergoes Pilot Testing in an appropriate course at Purdue under actual classroom conditions. The final level of evaluation, Field Testing, is currently being conducted on a limited basis at ten cooperating institutions. Achievement scores are obtained to measure the effectiveness of the materials, and a scale to measure attitudes t ward biology has been developed.

For additional information contact: Dr. Samuel N. Postlethwait, project director, or Dr. James D. Russell, evaluation coordinator, Mini-course Development Project, Department of Biological Sciences, Purdue University, Lafayette, Indiana, 47907.

BUSINESS ADMINISTRATION

Audio Tutorial Decision Theory

An experimental course has been designed to explore procedures which may be used to solve decision problems in Business Administration under conditions of uncertainty. After first studying decision-making techniques, primarily statistical, students are given opportunity to make decisions using these techniques, and then to observe and evaluate the outcomes of their decisions. Students are guided by audio-tutorial lessons through the concepts and techniques of statistical decision making. For each

unit of study, an audio tape cassette directs students to study sections of their text as well as other books, follow through examples, do problems, and listen to mini-lectures. Upon completion of his study of a unit, a student takes a mastery test to determine if he understood the material.

This tutorial approach is designed to provide two major advantages over more traditional lecture methods. First, to get the student more involved, and therefore more interested, in working in the course; second, to provide for a more personal relationship between student and teacher.

For further information contact: Warren J. Boe, Dept. of Business Administration, The University of Iowa, Iowa City, Iowa 52240. Phone: (319) 353-4960.

Simulating Financial Decision-Making Processes

This project integrates the three decision areas of finance: investment, long-run financing, and short-run investment-financing. The learning approach embodies determining key decisions and state variables; understanding interrelationships among key variables; and measuring sensitivity of final outcomes when changes in variables occur. Monte Carlo simulation is used to incorporate these three objectives and introduce the dimensions of uncertainty, time, and complexity in the decision processes.

A manuscript entitled Simulating the Investment and Financial Decision-Making Process provides the following basis of the project: (1) a brief review of the theoretical concepts in each decision area; (2) financial background data on Genley Company and a scenario of management practices and risk attitudes; (3) a discussion of four investment alternatives facing Genley; (4) a user manual for preparing input data and for understanding the output.

Students work in groups of four for the capital budgeting and working capital projects. They justify the assumed relationship among the variables and determine probability values for each variable. The purpose of these projects is to evaluate the investment alternatives of Genley and select the set that maximizes the value of the company. The working capital model is linked to the capital budgeting model.

A model is used to determine the rate of return required on new investment in order to achieve management's earnings-per-share growth goal for an eight year period. The model determines how a firm finances the new investment in order to attain the EPS growth goal. Students work individually on this project and analyze both Genley Company and an existing corporation.

The models are flexible and easily adaptable to both undergraduate and graduate education. For further information contact: James A. Gentry, Department of Finance, University of Illinois, Urbana, Illinois 61801.

Marketing and Political Action

The similarities between the management of business organizations and the management of non-profit, social welfare, or politically-oriented organizations are undoubtedly more common than their differences, but little, if any, attempt is made to discuss and research the marketing of such "items" as hospital services, foreign aid, social welfare, or candidates for public office.

Thus during the Fall Quarter of 1970 and again in the Fall of 1971, a project entitled "Politics in Action: The Marketing of Political Candidates" was assigned as an integral part of an undergraduate marketing management course at The Ohio State University. The 48 students enrolled in the six credit course were required to read a contemporary marketing management text, prepare cases, and also to complete the project. Students were encouraged to become active participants in the campaigns, to gain some perspective on the important role of marketing in the "selling" of political candidates. Throughout the quarter, it was possible for the instructor to relate various elements of the marketing mix--such as personal selling, advertising, sales promotion, and the like--to the marketing of candidates.

This same approach was used during the Spring Quarter of 1971 in a study of the marketing efforts of social service agencies such as United Community Council, Planned Parenthood, the Red Cross, and the like. The Program attempted to show business majors and particularly marketing majors the great need for their talent in community service related fields.

For further information contact: Professor Louis Stern, College of Administrative Science, 1775 So. College Rd., Columbus, Ohio 43210.

DENTISTRY

Audiovisual and CAI Programming in Dental Materials and Dental Hygiene

Audiovisual and computer assisted instructional materials have been developed for use in the Dental School at Northwestern University. The Department of Biological Materials has developed an audiovisual series covering the dental materials armamentarium taught to dental auxiliaries and freshmen dental students. This series includes 35 mm sound-slide sets, 8 mm and super 8 mm movies and video tapes (B & W on 1/2" new format). The Department of Dental Hygiene has completed an 8 mm movie describing its mobile clinic and various AV programming directed toward recruitment.

CAI programs have been developed using the ON-Line system of the University's Vogelback Computing Center. The courses are written in LINGO and PLATO languages which are run on a CDC 6400 using CRT and TTY terminals. The courses in dental materials include multiple choice programs covering the dental materials armamentarium which feature tutorial corrections to wrong answers and linear and branched learning programs on specific basic science fundamentals. The Dental Hygiene programming consists of multiple choice with wrong answer tutorial on instrument choice and scaling technique.

For further information contact: Dr. Evan H. Greener, Department of Biological Materials, Northwestern University Dental School, 311 E. Chicago Ave., Chicago, Ill. 60611.

ECONOMICS

Computer Test Scoring and Analysis

A computer programmed system has been designed to counter some problems associated with lecturing to oversize classes in introductory economics. Students attend lectures as usual, but at the end of each week they are given a brief test. Results are fed into a computer, and two hours later the students receive their scores, plus instructions on how to improve their understanding of the subject. Tutors and lecturers also receive special instructions from the computer which tell them where and how they can improve their presentations.

TIPS ("Teaching Information Processing System") enables the instructor to prepare, administer, and process short (10 minute) multiple-choice "surveys" on a regular basis. Based on the survey results, and combined with previously prepared instructions provided by the professor, a series of instructional reports is prepared and printed by data processing equipment. Individualized assignments for each student are given out, based on individual needs and measured efficiency.

To evaluate the program, half the class took the TIPS course for six weeks, while the other group carried on normally. Then all the students took the same examination. TIPS students averaged a 20 per cent better grade. Further testing showed that the best students improved 10 per cent, average students 15 per cent, and poorer students 30 per cent. Students are thought to remember more because they don't have to "cram" their study just before a major exam. This has been demonstrated by recalling graduates for retesting on the subject matter. Students are kept up to par by the computer, any weaknesses being pinpointed quickly and corrected. The students themselves are sold on the method. If they

fully understand a topic, they are not compelled to do assignment work on it. If they show consistently good form, they are excused from exams. Usually about 10 per cent of the classes are exempt. TIPS is currently supported by an Esso Educational Foundation grant.

For further information contact: Prof. Allen C. Kelley, Dept. of Economics, University of Wisconsin-Madison, Madison, Wisconsin.

EDUCATION

A Self-instruction Lab for the Operation of AV Equipment and Production of Simple Instructional Materials

The Educational Media Staff at The University of Iowa has developed, over a three year period, a course in equipment operation and production of audiovisual material through self-instruction. The course has been designed to meet the needs of the classroom teacher as indicated by a survey of a stratified-random-sample of public school administrators and teachers in the state. The course consists of three integrated parts: (1) equipment operations of nine most commonly used projection and audio machines (students must pass a performance exam on each); (2) preparation of instructional materials (seven projects graded); (3) and non-obligatory enrichment lectures which deal with situations not covered in the manual but which the teacher will probably encounter during his teaching career.

Two half-time teaching assistants handle teaching and individual testing of 350 students each semester. The course is built around a self-instruction manual which contains stated behavioral objectives, and enables students to work at a pace and time that suits their needs in a supervised laboratory which is open 60 hours per week. Students may resubmit projects until the desired quality is achieved.

Designed as a pre- or co-requisite to a media selection and utilization course, the course provides basic skills to enable the student to develop instructional units where media are successfully integrated to meet major unit objectives in his teaching field. Thorough course and unit evaluations have been made each semester and indicated changes in the course and the manual have been made. Student evaluations of the course have been highly complimentary.

For further information contact: John Bullard or Calvin Mether, Educational Media, C204 East Hall, The University of Iowa, Iowa City, Iowa 52240. Phone (319) 353-5685.

A Competency Based Reading Instruction Course

All prospective teachers specializing in elementary and special education must obtain skills in the teaching of reading. Prior to Fall, 1970, the required course was conducted within a framework of two large group lectures and a one hour recitation session per week, but reports from many student teachers indicated they were dissatisfied with their abilities to teach reading. A newly developed course is unique in three ways: (1) it demonstrates instructional principles to be used by elementary teachers; (2) it is performance-based; and (3) it offers numerous options for pursuing individual needs and interests. The major principles being modeled include: (1) instructor accountability; (2) competency-based instruction; (3) application of principles of learning theory; and (4) the development of humanistic relationships between instructor and student.

Considerable evaluative data were collected during the first year of the project and the results of these evaluations were encouraging. Students indicated a high degree of enthusiasm for the competency based instructional model and demonstrated greater achievement of course objectives and more self-confidence than previously. A second year of development is under way emphasizing refinement of simulation materials, student workbooks, and management procedures.

For more complete information and data on the program write: Dr. Gerald G. Duffy, 357 Erickson Hall, Michigan State University, East Lansing, Michigan 48823.

Improvement of College Instruction in the School of Agriculture

The Department of Education, in cooperation with the School of Agriculture, offers an informal seminar, "Improvement of College Instruction" designed for graduate students in Agriculture who expect to become teachers. The program was undertaken on an experimental basis in the Spring of 1971 and repeated in the Fall of the same year.

The course consists of: Introduction to College Students; Instructional Theory; Practice Teaching Before a Video Tape; Writing of Objectives; Writing of Test Items; Planning. An attempt is also made to demonstrate how college professors may utilize student feedback to modify teaching. An improvement now being made is the addition of six self-tutorial units. These are multi-media units on a variety of topics which include audio-tapes, video tapes, journal articles, mimeographed handouts, and slides. Each unit will provide information, theories, and problems associated

with each of the topics listed below. In effect, the instructor is demonstrating good teaching not by talking about it, but by utilizing effective teaching techniques and by requiring students to practice-teach before undergraduate college students. The major thrust of the course, therefore, is not a theoretical analysis of college teaching but the actual practice of what has been recognized as effective teaching techniques.

For additional information contact: Dr. S. Samuel Shermis, Department of Education, Purdue University, Lafayette, Indiana 47907.

ENGINEERING

Oral Exams and Varied Scheduling

In the Fall of 1969, the traditional electrical engineering laboratory courses were presented under a variety of teaching methods. Two sophomore laboratory courses were chosen for the study. Each course provided the basis for a crossed factorial design which was studied using analysis of variance techniques. In each course, the sections were divided into two types: one with an oral examination, the other without. Thus, the examination variable or factor for both courses was oral exams or no orals. In Course A, conventional scheduling was compared to a tutorial arrangement. In Course B, three scheduling factors were used: "regular" scheduling required the student to attend lab sessions that were fixed by the normal structure of the student's academic schedule; "head start," a borrowed but descriptive term, duplicates regular scheduling but in addition allows a 50 per cent increase in laboratory time immediately preceding the scheduled session; "open shop" scheduling allowed the student to attend the laboratory session of his choice at any time during the week on a sign-up basis.

The instruments used to evaluate the various teaching combinations consisted of a common final examination and a questionnaire designed to measure differences in attitude, work loads, perception of student-instructor relations, etc.

For additional information see IEEE Transactions on Education, August 1971, or contact : Professor John C. Lindenlaub, School of Electrical Engineering, Purdue University, Lafayette, Indiana 47907.

Team Teaching in Short Blocks

The Technological Institute at Northwestern University has introduced a pilot program for sixty-one entering freshmen, which represents a unique departure in engineering education at the undergraduate level. The integrated freshman year program is under the direction of an inter-disciplinary faculty team consisting of specialists in engineering, mathematics, chemistry, and physics. Rather than presenting the basic introductory material normally taken by freshmen engineering students in single subject courses, the content is given in short blocks of one to three weeks duration, team taught by the specialists involved in the program. Each block covers a single topic presented from an inter-disciplinary perspective by the specialist involved.

A typical day for a student in the experimental program would involve a laboratory during the morning in which the student would participate with other students in work on a project or experiment. Each laboratory area has a mini-computer with four terminals for calculation, for learning about a computer, and for learning about controlling equipment with such procedures. The afternoon might involve working with the instructional team in a lecture or tutorial session. Other strategies are being employed in different blocks which include the use of resources other than those mentioned above.

Examinations and grades are given during the three or four day interval at the conclusion of each block. Grades in a block are A, B, C, and Y (incomplete). During inter-block periods and during the time for final examinations a student may take a second examination to raise his grade.

A task group from the Department of Psychology is conducting a thorough evaluation of the integrated freshman program by comparing the learning outcomes of participating students, those who volunteered but could not be placed due to limited facilities, and those students who expressed no interest.

For further information contact: Professor Jerome B. Cohen, Department of Materials Science, The Technology Institute, Northwestern University, Evanston, Illinois 60201.

Technology and Society

In recent years, engineering educators and leaders of higher education have recognized that engineering colleges have the responsibility to develop and offer courses for students in other disciplines. The College of Engineering has initiated this year (1971-72) a group of three courses intended to develop some of the concepts and physical principles that underlie the engineering approach to problems, and to explore the current

interactions between technology and culture. The courses are planned to serve as a basic science course for students majoring in the humanities, the sciences, and the professions. A three volume text, The Man-Made World, (McGraw-Hill, 1969) was prepared for these courses which presents sophisticated engineering concepts and techniques without excessive detail, illustrating them with examples from everyday life.

The first course introduces the model as a working representer of a concept or a system. The development draws upon such diverse disciplines as economics, demography, transporation, mechanics, and the life sciences to illustrate the generality of the principle and its use in the process of decision making. The second course treats the analysis of dynamic systems, emphasizing the concepts of feedback and stability, and the third course considers the digital computer.

In addition to class lectures in which this material will be presented, special sessions are scheduled weekly during which guest lecturers discuss current research and development programs in various disciplines and their relationships with technology and society. These lectures will be presented by faculty and representatives from industry who can relate their research to students who may never have considered the implications of such research. They will include engineers concerned with technological problems and individuals from other disciplines who have adapted some portion of engineering approach to problems.

For further information contact: Professor W.J. Verner, College of Engineering, Ohio State University, 2070 Neil Ave., Columbus, Ohio 43210.

ENGLISH

Full-Length Feature-Film Adaptations to Stimulate and Improve Reading of Required Texts and Expository Writing

All freshmen entering Michigan State University are required to take a three-term sequence entitled "American Thought and Language" (ATL). These courses emphasize reading, expository writing, and the American cultural and intellectual experience. Usually they are taught through traditional techniques of assigned readings, lectures with class discussions, and expository writing assignments. In an effort to increase student motivation and learning, a pilot study was conducted in which full-length feature-film adaptations became an integral part of the ATL instructional model.

It was hypothesized that use of a feature film of a novel or play would enable students to achieve greater retention of the novel or play, more vividly perceive the written document, and more effectively perceive the unique characteristics of the genre of the novel, play, and film. It was further hypothesized that use of feature films would enable students to

compare and contrast filmic and literary devices of theme, point of view, plot development, characterization, setting, simile, metaphor, symbolism, irony, humor, cliché, understatement, and economy, and improve their classroom discussion and expository writing.

These hypotheses were tested in the context of several experimental/control group comparisons extending over three terms. The experimental groups were shown the films and did the readings while the control groups did the readings only, but had two additional classroom hours of instruction. The substantive content and teaching techniques for both groups were as similar as possible, save for the use of the films. Both experimental and control groups were taught by the same instructors. Common reading and writing assignments, discussion and study questions, and written examinations were used. The same instructor led the discussion of a particular book and film in all sections.

Preliminary data were encouraging. Student comments and attitudes were highly favorable, with over 66.3% of the students each term rating the experimental sections excellent or good. As a result of the problems encountered during the pilot study, it is hoped the experiment will be replicated in 1972-73. The knowledge and experience gained from the pilot study, the information accumulated from a survey of other courses over the nation using films for a similar purpose, and the input from discussions at film conferences and professional meetings will be used to improve the experimental procedures and refine the experimental treatments.

For further information on this project write: Dr. Herbert Bergman, 265 Bessey Hall, Michigan State University, East Lansing, Michigan 48823.

New Approaches to Poetry and Literary Study

Now in the second phase of development is a quarter-long undergraduate course in the techniques of literary study. A series of self-instructional programs on the nature of figurative language was designed to teach basic literary analysis and included the following devices: image, metaphor, simile, allusion, personification, symbol, and irony.

Each self-instructional packet consists of 40 to 90 frames, presenting the concept or poetic device in small, successive steps and providing for frequent student response. These are completed by the student outside the classroom and kept by him for review. A quarter-long faculty seminar on instructional design and an on-going informal seminar on the nature of metaphor, bringing together graduate students and faculty from such fields of study as linguistics, child psychology, psychology, and English literature preceded the development of the instructional materials.

Attempts to conceptualize the structure underlying the process of literary analysis and the role of these concepts resulted in the delineation of five levels of student performance criteria.

1. Identification out of context: the student is able to recognize instances of a specific poetic device when presented with one or more lines from a poem.

2. Identification within the context of a poem: student is able to locate and identify poetic devices embedded in a poem.

3. Interpretation: student is able to state the meaning or intent of the poetic device within the context of a specific poem.

4. Generation: student is able to create a specific poetic device; e.g. write his own metaphors.

5. Definition: student is able to adequately explain the structure and function of a poetic device, on a formal or informal level. (e.g., "Tell a friend what a metaphor does.")

Present plans call for formalizing the materials and methods of the course and a new approach to the teaching of poetry, so that it may be used by any English instructor. This includes the development of a written guide for the systematic use of the programmed materials, pre- and posttests, a guide for discussion and use of undergraduates as discussion leaders, related texts, records, films, and tapes particularly effective when used in conjunction with the programmed materials.

For further information contact: Mrs. Elaine Parent, Center for Research in Human Learning, 400 Ford Hall, University of Minnesota, Minneapolis, Minnesota 55455.

HISTORY

Discussion Groups in Large Intermediate-level History Courses

A special problem arises at the University of Illinois in history courses that are neither as broad as the introdcutory surveys nor as specialized as the graduate and undergraduate seminars. These intermediate-level classes (of the 300 series) often have from 50 to 100 students, and are thus too large for good whole-group discussions. At the same time the lecture method is often unsatisfactory, for the students typically range from some who have almost no background in the subject to others who have a lot.

One solution is to use volunteers from the class itself to lead the discussion of small groups of from five to eight persons within the same large classroom. A classroom that is large enough to permit the groups to be well separated from each other and moveable chairs to permit each group

to form itself into a tight face-to-face circle are required. The success of this method depends on arranging groups that will work well together. Choice of discussion leaders, how much freedom to allow each group to choose its own leaders and to structure its own discussion, and to what extent performance in the discussion groups should constitute an element in the course grade are some of the many decisions which determine group effectiveness. When it works well this system makes use of the knowledge of the more advanced students in the class, and spurs them to extra effort. It gives all students the opportunity to discuss new topics and concepts and to deal actively rather than passively with the material.

For further information contact: Ralph T. Fisher Jr., Department of History, University of Illinois, Urbana, Illinois 61801.

Development of Options in a History Course

History of the American City is a large-enrollment upper-level undergraduate course taught at the University of Michigan in which each of the nearly 300 students elects a number of options in goals and means for achieving them. During the first three weeks each student or interest group draws up a formal plan with the help of the teaching assistants, the course coordinator, and the professor. Students may organize teams for field work or group discussion, or may do individual projects. Optional attendance at two regular lectures and one discussion group weekly is supplemented by extensive office hours.

Students write papers, take tests, give reports, and when needed, engage in a tutorial session. Remedial assistance is offered so that a low grade on the midterm exam can be raised by doing extra work, usually a "take home" exam. On the final exam a student may elect to write on one question which he has written previously with the help of a teaching assistant. An innovation is the "aggressive drop" which permits the professor to allow a student to drop the course at any time during the term, thus avoiding the punitive "F" grade.

Despite the rather novel, but demanding, instructional arrangement student evaluations of the course last term (Fall, 1971) showed that 75% were positive to enthusiastic. Only 18 of the 285 students enrolled took the "aggressive drop" option; all who did remedial work to raise midterm grades showed improvement.

The course could be strengthened in the future (and made available to more students) by using teaching assistants from the related fields of geography, sociology, economics, and architecture.

For further information contact: Prof. Sam Bass Warner, Dept. of History, Boston University, Boston, Mass. or Dr. Jean Mann, Center for Research on Learning and Teaching, 109 E. Madison, Ann Arbor, Michigan 48104.

LANGUAGE

A New German Grammar

A project based on a transformational grammar of the German language, started in 1962 as an attempt to organize a German grammar, has become a device for testing the economy of that grammar in an instructional setting. (See also "Instructional System for Teaching German Receives Field Trial," CIC Report No. 2, Fall 1966, p. 8). Both the grammar and the instructional system have progressed through numerous revisions, based on student learning and performance. The present program has the following components:

Textbook
The textbook contains explanations of each of the 176 manipulations which comprise the grammar, drills, stories and dialogues in German and English, and questions about their content.

Language Laboratory
The entire series of drills is on tape in the language laboratory. The student controls pace of the tapes himself during this oral practice.

Computer
The entire series of exercises are also on the computer. The student spends two to five hours per week on a CRT-teletypewriter computer terminal giving responses and having his errors pointed out. Students can move backwards to previous drills at any time, can look at their performance records at any time, can access an English-German dictionary at any time, can skip later exercises in each drill or play German games if their performance warrants.

CCTV
This presents grammatical explanations, short vignettes to introduce vocabulary, and some group response drills. TV tapes are available only during class periods twice a week.

Classroom
Classes of 20 students meet with graduate teaching assistants one to three times weekly. The TA's function is solely to ask questions of students whose answers require them to apply their knowledge of grammatical algorithms and vocabulary in practical personal situations.

Evaluation
Quizzes are administered weekly in classes and a quarterly final examination is given. In-class performance and computer performance are also important sources of information to the instructors, but quizzes and examinations are currently the basis for assigning student grades.

For further information contact: Professor Cecil Wood, Department of German, University of Minnesota, Minneapolis, Minnesota 55455.

Hebrew Language Study with a Programmed Text and Tape

Y cn prbbly rd 'nglsh wtht vwls 'f y try hrd--but how would you like to learn a foreign language which does not write its vowels? Students of Hebrew are studying in a new experimental program designed to ease their path.

When many centuries ago Hebrew ceased to be a living language, its lack of written vowels presented a problem to students, so a system of dots and dashes placed over and under the letters was devised to fill the gap. Traditionally, students learn this system of vowel points first, and then learn to do without it so as to read the "unpointed" Hebrew used for the modern language. This has two disadvantages. First, some students get "hooked" on the vowel points and never feel comfortable without them. Second, the points represent Hebrew as it was pronounced 1200 years ago--and there have been many changes. Text books have been published now dispensing entirely with the vowel points--but how are students to learn to read?

This new approach tackles the problem from a different angle. If you look at the first word in this article you will realize that a foreigner might have difficulty in knowing that it stood for "you". However, if you said "you" to him orally, and asked him to write it down without vowels he would have no difficulty in writing "y" because he is being asked to take away something, rather than to supply something that is missing. He should then be able to read it back--since he just heard it. Using this method, a programmed text was written to be used in conjunction with a tape. The student writes down what he hears on the tape, and only then is asked to read it back. He is able to proceed at his own pace.

The program has been evaluated by students, and it is hoped to publish the results. The method offers promise of aiding the instruction of other languages which use exotic scripts and thereby offer special difficulties to students.

For further information contact: Dr. A.D. Corré, Dept. of Hebrew Studies, Univ. of Wisconsin-Milwaukee, Milwaukee, Wisconsin.

LAW

Clinical Training in Law

Clinical training is now offered at the College of Law as a part of the regular curriculum. Currently there is a wide variety of opportunities for third-year students to acquire clinical training in poverty law areas by enrolling in "practicums" providing one to six hours of credit. Practicums provide clinical training in the practice of law under the close supervision of a faculty member and the supervising attorney, using live cases, and phases of live cases, whenever practicable. Practicums are planned and organized to insure that each student receives supervised training in all important elements of a particular kind of practice.

Poverty Law Specialists-Civil. Students interested in civil practice on behalf of the poor after graduation may develop a specialty in this field by enrolling in the courses in Legal Problems of the Poor and Legal Problems of the Poor--Remedies, and by electing the Civil Law Practicum.

Poverty Law Specialists-Criminal. Students interested in criminal practice on behalf of the poor after graduation may develop a specialty in this field by electing at least one course in the criminal justice area and by enrolling in the Criminal Law Practicum.

Other clinical experiences. In addition to the opportunities to develop poverty law specialties, clinical training is also available through a Welfare Law practicum associated with the Welfare Law Seminar and designed to expose students to the live legal problems of welfare clients, and through a Juvenile Law practicum designed to provide experience in the operations and problems of the juvenile courts.

Other forms of clinical training, not necessarily related to the legal problems of the poor, are also being developed under the auspices of the Law College's Director of Clinical and Interdisciplinary Programs. Current examples include the seminar on Legislative Planning, where students receive faculty-supervised experience while acting as assistant lobbyists in the Ohio Legislature; internship with the Ohio Commissioner of Securities available to students enrolled in the Securities Regulation Seminar; and a clinical course in which students will study the operations of the Ohio Department of Industrial Relations under the supervision of its Legal Advisor.

For further information contact: Professor Albert M. Kuhfeld, Associate Dean, College of Law, The Ohio State University, Columbus, Ohio 43210.

LIBRARY SCIENCE

Realism in Teaching Reference Work

The School of Library Science at The University of Iowa offers reference service to the libraries of the state through a teletype network. Students in an advanced reference course, with the help of the School's faculty, use the library resources of the Iowa City area, including the Historical Society, the Iowa City Public Library, and the University's libraries to answer questions from public libraries and college libraries across the state.

The intended benefits of this service are both educational and service oriented. The students gain experience answering real questions under the same time pressures they will later find in library work. Students also see firsthand the operation of a network, the determination of its limits, and its evaluation.

The libraries of the state receive an important new service. Many of these libraries lack sufficient bibliographic and reference tools to answer all of the questions they receive, or to properly verify citations they wish to borrow on interlibrary loan. Through the teletype service these libraries can now go beyond their own resources.

For further information contact: Carl F. Orgren, 208 Jessup Hall, The University of Iowa, Iowa City, Iowa 52240.

MEDICINE

Integrated Premedical-Medical Program

The University of Michigan, under a grant from the National Institutes of Health, is setting up an experimental curriculum in which medical and premedical education are combined into a single, integrated six-year program. A goal of this project is to provide an alternative pathway to the M.D. degree which emphasizes the humanistic aspects of medicine by removing undergraduate and professional distinctions in training, and by increasing interaction between liberal arts and medical school faculties.

Underlying the philosophy of the program is the basic assumption that the number of facts and concepts in natural and basic medical sciences necessary for the practice of medicine is smaller, and the number in behavioral sciences and the humanities is greater, than is usually apparent in standard medical school curricula.

Committees composed of Medical School and LSA faculty are planning the integrated program. The final curriculum will be submitted to the LSA Curriculum Committee to determine whether students in the program will qualify for a bachelor's degree. Fifty students (with an equal sex distribution) will be admitted for the first class which will begin in Fall, 1972.

Among the stated objectives is the development in the student of social responsibility leading to new approaches in preventive medicine, health education, and community programs. It is assumed that education should include moral, social, and attitudinal growth as well as increased knowledge of facts and concepts. Extracurricular programs including research experiences, living arrangements, non-curricular faculty and student contacts, are seen as an important part of intellectual growth. The program will be as flexible as possible, requiring specified courses only where it is obvious that every student must learn a certain body of knowledge.

The program provides a unique opportunity for curricular innovations. The Steering Committee is especially interested in experimentation with audio-tutorial instruction, and the development of new courses to bridge the humanities and/or social sciences with the natural sciences. Funds will be made available to individual faculty members to aid in planning new courses.

For further information contact: Professor Harvey Sparks, 7310 Medical Science I, University of Michigan, Ann Arbor, Mich. 48104.

MUSIC

CAI for Music Theory

During Winter Quarter, 1971, thirty students enrolled in the beginning Freshman music theory course went through a series of three CAI drills on triad construction and placing chords in keys. This particular group of students was part of a pilot project to see whether Computer Assisted Instruction would be worthwhile as an ongoing method of instruction for music theory. Evaluation was made on the basis of an analysis of actual responses made by the students on-line, on the basis of a statistical program developed by the personnel at the CAI headquarters, and on the basis of feedback acquired from a questionnaire distributed by the music theory department to the students at the end of the quarter. The questionnaire was designed to get the actual feelings of the students on various matters relating to the difficulty of subject matter, the logistics of getting to CAI typewriter terminals, etc. The data revealed that although there were a number of items that needed improvement (for example, there was a need for an accompanying workbook as well as actual staff notation), the majority of the students considered CAI to be a valuable adjunct to the course and wished to see more types of subject matter presented through CAI.

The amount of material on the computer has now increased to four basic modules. In addition to the chord drills, there are drills available on the spelling and manipulation of seventh chords as well as a notational package which includes material of a diagnostic, instructional and drill-and-practice nature on the Grand Staff, ledger lines and octave-transposition signs. There is also an altered chord drill on the computer. Last quarter the entire Freshman class participated in the CAI program on chord drills.

Although problem-solving and highly-interactive instructional programs are feasible and probably quite desirable, at the present time the music theory department considers the drill-and-practice, diagnostic, and limited tutorial modes to be the most promising ones to carry out the objectives of its instructional program.

For further information contact: Michael Arenson or Burdette Green, Department of Music Theory and Composition, Ohio State University, Columbus, Ohio 43210.

An Electronic Piano Laboratory for Piano Pedagogy

An electronic piano laboratory, consisting of twelve student units and a teacher unit equipped with an instructional control center is being used for instruction in introductory piano. Each student instrument contains a full-size piano keyboard, a pair of headsets, and a stereo tape deck. The instructional control center permits the teacher to communicate through the headsets with individuals within the class, small groups of students within the class, or the whole class at once. Audio tapes have been developed by the instructor and are used as aids in drilling students on basic piano skills.

The Group Piano Program in the School of Music is utilizing the laboratory for college level piano instruction during approximately thirty hours per week. The laboratory is also opened for a number of hours each week as a practice facility for tutorial assistance.

The purpose of the electronic piano laboratory is to individualize instruction in piano pedagogy by providing a means for students to progress through the learning sequences at different rates. A library of audio tutorial tapes is being developed which will aid students to develop more efficient practice habits. The instructional tapes, together with the laboratory itself, are being developed to serve as a model for individualized instruction in the teaching of piano.

For further information contact: Dr. Thomas W. Miller, School of Music, Northwestern University, Evanston, Illinois 60201.

NURSING EDUCATION

Curricular Flexibility in Nursing Education

Beginning Fall, 1971, School of Nursing freshmen are participating in a new baccalaureate curriculum that allows them to take nursing courses earlier and to specialize in a particular area.

Rather than taking all nursing courses and clinical training during the last two years of the four-year program, students will now take nursing courses and clinical training during all four years starting the first semester freshman year. Because students will not all take nursing courses simultaneously, the School can admit more students.

This new curriculum allows greater flexibility for individual students and requires fewer credits to graduate; for example, the foreign language requirement and zoology have been eliminated from basic requirements. In addition, 32 elective credits are allowed under the new system. These may be used for either advanced nursing courses or general education courses such as history, art, or economics.

When students do specialize during the last two years, they may choose one of two broad areas: specialization in primary care nursing, concentrating on nursing related to health promotion, disease prevention, or caring for patients with commonly occurring illnesses; and nursing related to caring for ill patients, for instance, patients in a hospital. Clinical training will be based on whichever area the student chooses.

For further information contact: Prof. Rose M. Chioni, University of Wisconsin Medical Center, Madison, Wisconsin 53706.

PHARMACY

Cassette Tapes for an Extension Course

A new continuing education program which pharmacists and allied health professionals can utilize in their pharmacies or homes has been developed to replace the currently available continuing education conferences sponsored by pharmacy schools which many pharmacists find difficult to attend. Other programs include correspondence courses which many times are not completed. The program is an independent study series which uses lectures recorded on cassette tapes accompanied by printed materials for study and reference. The cassette tape courses provide the basic educational attributes of the teaching-learning situation: illustrated

lectures by teacher-experts; periodic self-examinations to determine progress; a final examination to determine competency; and a recognition of accomplishment in the form of a permanent transcript record.

The tape-lecture series will combine resources of the seven schools of pharmacy in the Midwest. Professionals from Ohio State University, Purdue University, and the Universities of Illinois, Michigan, Minnesota, Iowa, and Wisconsin will contribute tapes and materials to the program. The first series being distributed is "Selected Topics in Pharmacology," a seven-lecture series by Joseph M. Benforado. It provides 14 hours of continuing education credit. Three other series covering "Clinical Pharmacy," "Drug Interaction," and "Over-the-Counter Preparations" will be available early in 1972.

For further information contact: Professor Melvin H. Weinswig, School of Pharmacy, University of Wisconsin-Madison, Madison, Wisconsin 53706.

POLITICAL SCIENCE

Using Multi-Media in a Large Enrollment Course

A new introductory course in the study of politics has been developed with a substantive focus on political power in America, employing a wide variety of multi-media techniques including films, TV programs, tape recordings, live lectures, simulations, and discussion groups as well as six paperback books. The course was carefully designed in view of the substance to be taught, with a judicious balance between teaching techniques. A series of new films, TV programs, and audio tapes was created especially for it by the Film Making Department of the Office of Instructional Resources.

The course was designed to allow a single faculty member to teach 500 or more students at the same time, but to teach them more about the study of politics than they have been able to learn in the small classes and seminars of previous years. It was developed from the previous two-quarter American Government course required of all political science students. Each new experiment in course design was carefully checked and evaluated by faculty in the Political Science Department and the Office of Instructional Resources, and by the students using a standardized course evaluation form used on all University of Illinois campuses. Positive attitudes toward the course increased and have remained constant over several quarters; alienation caused by class size has been significantly reduced.

For further information contact: Prof. Dick Simpson, Dept. of Political Science, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680. For complimentary copies of the text, Who Rules? An Introduction to the Study of Politics, write to Swallow Press, 1139 S. Wabash, Chicago, Illinois 60605.

PSYCHOLOGY

Computer Simulations for Teaching Research Design in Elementary Experimental Psychology

EXPER SIM is a set of computer-based exercises which simulate experiences in psychological research design. Three problem areas have been investigated: imprinting behavior in precocial birds; the etiology of schizophrenia; and motivation in an industrial setting. Within the well-defined limits of the problem area, the student can construct any of a large number of possible hypotheses. By holding the values of certain variables constant and by systematically altering the values of one or more other variables, the student can design an experiment to test his hypothesis.

The student's experiment can be run in either batch or interactive mode. "Batch" refers to the process of punching the data on cards, submitting them to the computer's operating system, and waiting from a few minutes to a few hours for output. In "interactive" mode, the student communicates in a conversational, more direct way with the computer. When the student receives his output (data for certain variable specifications) he summarizes his experiment for the class. At this point, a class-generated literature has begun. Each student operates within a limited budget and cannot exceed his computer allowance. He has the experience of designing not only an experiment, but an entire research program; and he must do so within limits that are representative of the actual constraints faced by a researching psychologist.

The EXPER SIM simulations are just a beginning. The goal is to establish a library of data-generating models across a wide range of problem areas in psychology. Hopefully each student will be able to select a problem area to work in as he would choose a book from a library shelf to read.

For further information contact: CRLT, 109 E. Madison, Ann Arbor, Mich. 48104 for free 6 page summary or send $2.00 for full report.

Videotapes Combined with Discussions

Nine lecture-demonstration videotapes, each lasting approximately thirty minutes, were prepared for Psychology 255, Lectures in Social Psychology. The tapes were designed to replace the "information-giving" aspect of live lectures; the instructor is present following each showing scheduled for regular class meetings to answer questions and to discuss related issues. The tapes have the advantage of relieving the instructor of the tedious repetition of standard material. Further, repeated showings of each tape enable the students to see material several times and to review it for the examination.

Students have mentioned that the experiments shown give them a clear idea of general laboratory procedure, and help them to understand the particular studies dramatized. They also appreciate the follow-up discussion. On the negative side, many students have found the lectures too densely written and too rapidly presented. A number have said that they found the dramatizations to be amateurish, adding little to their knowledge or insight.

For further information contact: Dr. Charles L. Gruder, Assistant Prof. of Psychology, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680.

A Test Item Pool Designed to Stimulate and Measure Creative Thinking in Psychology

Many students and faculty have asserted that creative thinking should be an integral part of the educational process in high school and college, but aside from occasional term reports and individual projects, the evaluation of achievement in most courses does not include measures of creativity. A grant from the MSU Educational Development Program was used to develop a pool of validated test items to stimulate and measure creative thinking in psychology courses, and reduce content reproduction on examinations.

Two criteria were identified as critical to test item development: (a) items must be short, (b) items should measure the degree to which students were able to generate unique applications or implications of the psychological facts and principles derived from the course. Training procedures for item writing and grading were developed after five item types were identified: (1) write titles for graphs or tables; (2) draw conclusions from graphs or tables; (3) state imaginative hypotheses; (4) write imaginative sentences; and (5) state consequences. After a short training period involving demonstrations and supervised practice on each item type, Dr. Johnson found that seniors and graduate students were able to write satisfactory items. Rating guides and training procedures were then developed for test graders.

The measure of accuracy of grading was the inter-judge agreement, measured after training, of the grades given by two judges working independently. All test answers were rated on a scale of 1-7. With the aid of rating guides for each item type, seniors and graduate students learned to grade two answers per minute with an inter-judge agreement ranging from 75% to 95%. It was concluded that adequate skills in both item writing and item grading can be acquired as easily for tests of creativity as for conventional achievement tests.

Analyses of data disclose a small correlation between conventional achievement tests and tests of creative thinking. Students scoring higher on conventional tests appear able to combine course concepts in unique ways slightly better than students whose conventional test achievement is lower. The chief advantage of using tests of creative thinking is that they, in combination with conventional achievement tests, yield more valid information about students' intellectual performance than scores on either type of test alone.

For further information contact: Dr. Donald M. Johnson, 223 Psychology Research Building, Michigan State University, East Lansing, Michigan 48223.

SOCIAL WORK

Self-Instruction Slide/Tape Presentations to Introduce Social Work Students to Community Services

Social Work 367 is a course which prepares students for placement in community agencies. Self-instructional slide/tape presentations are used to introduce them to the social welfare system and selected community agencies in place of the former lectures, small discussion groups, and field trips to individual agencies.

Seven slide/tape lessons were developed including child welfare, mental retardation, school social work, mental health, corrections, medical social work, and family services. Objectives were to familiarize the student with information related to: (1) the network of public and private welfare services available to community residents; (2) the organization, function, and development of major social agencies; (3) the client population, such as sex, age, income, race, disability, eligibility, and referral sources; (4) the types of services presently available to clients such as foster care for children, aid to the disabled, rehabilitation programs, vocational training, family counseling, day care services, crisis intervention and individual social treatment.

Students consistently rated the units more useful if their familiarity with the material was low. Since many students entering social work have previous experience in the field through employment or volunteer work, it can be expected that many will have some knowledge of social work in one or more of the areas. Following the completion of a unit, students may talk with a graduate assistant in the resource office concerning the material, and may read current material concerning social welfare programs, employment possibilities, and volunteer positions. It appears that the slide/tape experience provides students with a better conceptual grasp of the whole system of inter-related social agencies, as opposed to first hand knowledge of one or two agencies.

For further information contact: Dr. Clayton T. Shorkey, 230 Baker Hall, Michigan State University, East Lansing, Michigan 48823.

II. University-Wide Activities

University of Wisconsin
Undergraduate Teaching Improvement Fund

When University of Wisconsin President John C. Weaver directed a reduction in the size of the University's Central Administration staff last spring, he indicated that the funds released would be placed in a special Undergraduate Teaching Improvement Fund. This December (1971) faculty within the entire UW system were notified that an Undergraduate Teaching Improvement Fund is available to support their proposals for improving undergraduate teaching. The total amount involved is $160,000 and the request from any one unit of the University was not to exceed $100,000.

Procedural guidelines for applying for support included notification that:

1. Each Chancellor would determine the unit procedure for soliciting and receiving proposals, and through the use of small committees composed of students, faculty and administrators, would select the most promising ones for submission to Central Administration.

2. There were to be at least five proposals from each unit of the University and these were to be ranked in order of priority.

3. The proposals were to be evaluated and selections made by Central Administration with awards announced early in January.

4. The campus evaluation committees were encouraged to look for proposals in which the objectives were clearly stated, where the significance and relevance to academic goals was delineated, and where a mechanism was suggested for self-evaluation of program effectiveness.

In what was a rather short period of time (less than three weeks) the respective faculties on the various campuses developed many impressive proposals aimed at strengthening undergraduate teaching. At UW-Milwaukee, for example, 66 proposals were submitted by the faculty and student government. Of these, nine were selected and ranked by the campus evaluating committee and forwarded to Central Administration. The nine endorsed proposals encompassed a wide spectrum of academic activity and included proposals from Engineering, French and Italian, Theatre Arts, Sociology, Economics, Chemistry, Geological Sciences and Political Science. The dollar requirements of these nine proposals was $104,000.

Five proposals from the Milwaukee campus totalling over $50,000, five proposals from the Madison campus totalling over $48,000, four proposals from the Green Bay campus for $29,000, one proposal from the Parkside campus for $15,000 and two proposals from the Center System totalling approximately $17,000 were chosen by Central Administration for funding. Numerous proposals worthy of support were not funded due to limited resources.

Perhaps the most encouraging finding of this exercise is the obvious on-going and enthusiastic commitment of the faculty to enhance their teaching efforts. There were many cases in which the faculty attempted to experiment, within existing resources, with innovative approaches in individualized instruction, undergraduate seminars, and the use of media. Strong emphasis was given to individualized instruction in proposals from throughout the UW system; media and computer assisted instruction were stressed at some campuses, and teaching laboratory improvement at others. Interdisciplinary proposals were common as were requests which would have division or campus wide benefits. It was found that less emphasis had been given to programs designed to up-grade the pedagogical skills of the faculty and teaching assistants. It was suggested that this aspect of undergraduate teaching be improved by continued efforts.

For further information contact: Richmond B. McQuistan, Assistant to the Vice-Chancellor, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53201.

An Experimenting College

The University College was created in 1931 but has more recently been enlarged to a steady-state enrollment of 300 students. The original conception was centered around the "inter-college degree" as an alternative for students who knew their educational and curriculum needs and could achieve their goals without the assistance of a more variable and individually designed course of study. The "Living-Learning Center" is a service unit within the University College which offers no credit or degrees, but directs students to various educational resources available in the metropolitan community surrounding the University which could be integrated with formal course work offered in the University. This is an effective bridge between academia and a myriad of work experiences, social action, and social agency opportunities off-campus.

As an experimenting unit, the University College is presently involved in two major projects: (1) The Experimental College, which stimulates new modes of education with special emphasis on self-directed learning, creative discovery, and the capacity to question and identify individual educational needs. This program is in its first year. (2) The University Without Walls--part of a national effort supported by grants from the Ford Foundation and the U.S. Office of Education. The University of Minnesota is the largest institution participating in this program which is based at Antioch College. Its philosophy has been summarized as: "...it abandons the tradition of a sharply circumscribed campus and provides education for students in their homes, at work within areas of special social problems, at more than one college, and in travel and service abroad. It abandons the tradition of a fixed age group (18-22) and recognizes that persons as young as 16 and as old as 60 may benefit from its program. It abandons the traditional classroom as the principal instrument of instruction, as well as the prescribed curriculum, the grades and credit points which, however they are added or averaged, do not yield a satisfactory measure of education. It enlarges the faculty to include knowledgeable people from outside the academic world and makes

use of various new techniques for storage, retrieval, and communication of knowledge. It places strong emphasis on student self-direction in learning, while still maintaining close teaching-learning relationships between students, teachers, and others. It aims to produce not finished graduates but lifelong learners."

For further information contact: Prof. James H. Werntz, Jr., Acting Dean, University College, University of Minnesota, Minneapolis, Minn. 55455.

INTERDISCIPLINARY PROGRAMS

Course Mart

Course Mart is a changing "stock market" of credit courses for undergraduates in the College of Literature, Science, and the Arts. Proposals are submitted by both students and faculty to a student-faculty committee which evaluates both content and teacher. If approved, the course must also be accepted by the LSA Curriculum Committee, after which the original committee is responsible for monitoring the course and further evaluation when it is finished.

Course Mart is now in its fourth year. The idea was originated by the Student Government Council Curricular Reform Committee, a group which reflected a strong student interest in curricular change, stimulating content relevant to the world beyond the campus, and a demand for direct "vertical" communication between administration, faculty, and students. Current offerings (Winter 1972) include 21 courses of which four are in literature (e.g., Major Theses in Science Fiction), six are in government and/or law (e.g., Law and Social Change), the rest in philosophy, sociology, religion, etc. Most only border traditional department offerings or are definitely interdisciplinary and problem oriented. They are usually taught outside the discipline departments for credit as a "College Course;" the number of these courses which can be applied toward a degree is limited, and the credits do not fulfill "distribution" requirements. Teachers of these courses must be LSA faculty members, although a qualified graduate student may do the teaching if sponsored by a faculty member. Innovative methods of teaching are often tried; many offer a choice of study projects and grading on a pass-fail basis. The Course Mart has no funds of its own; an adjustment of the work load of faculty members who teach the courses must be arranged with the department chairman and Dean. No one may teach more than one course at a time.

Problems have tended to cluster around the essential question of how to maintain quality of course content and the way it is taught--how to insure that the approved plans are actually carried out. Rapid expansion of both offerings and enrollments have made supervision and communication between the Planning Committee, sponsors, teachers, and students inadequate and incomplete; the usual department safeguards do not operate here. Administrative procedures are needed to solve these problems, yet without stifling the flexibility which is the Course Mart's reason for being. Although quality has varied and some experiments have failed, new courses have found their way into the regular curriculum, such as the Environmental Studies program. As a valuable laboratory for a changing curriculum, the Course Mart has had an enthusiastic reception from some faculty and many students.

For further information contact: Student Counseling Office, 1018 Angell Hall, University of Michigan, Ann Arbor, Michigan 48104.

MEASUREMENT AND EVALUATION

Computer Generated Repeatable Testing for Large University Classes

Indiana University has developed and implemented a practical and economical computerized technique to facilitate repeatable testing in large university classes. The digital computer is used to prepare large numbers of individualized tests by taking stratified random samples from a large pool of test items, thus providing quantities of equivalent tests which may be administered repeatedly, in class or out. Student responses to the tests are scored by computer. The method of repeatable testing encourages frequent monitoring of student performance, provides diagnostic feedback to the student, and encourages remedial self-instruction leading to improved student performance. The innovation is both feasible and useful on a large scale, and requires only facilities that are commonly available in academic institutions.

The computer generated repeatable testing method has been used since 1968 at Indiana University and elsewhere in many courses of varied size and level: chemistry, psychology, English, accounting, economics, computer science, geography. Student opinion of the technique is quite favorable, and the system of repeatable testing, immediate feedback, and self instruction is often described as "difficult but fair." Informal studies tend to indicate that overall student performance is higher in repeatably-tested sections than in conventionally taught sections.

Full documentation of the computer generated repeatable testing system is available. The computer programs for test generation and scoring are also available in several versions: Standard Fortran IV versions for most medium and large computer systems, Basic Fortran versions for small computers such as the IBM 1130, and specialized versions in CDC 6600 Fortran.

For further information contact: Prof. Franklin Prosser, Research Computing Center, Indiana University, Bloomington, Indiana 47401.

TEACHING ASSISTANTS

Residence Hall Training Program

The majority of students entering Michigan State University live in one of the 22 residence halls on campus for some duration of their university experience. For several years, an effort has been made to emphasize the role of the residence halls as a part of the context of the total university educational experience of the student. In 1971 it was proposed that to more clearly understand and develop the educational environment in MSU residence halls, a systems analysis and advisory staff training program be developed for one hall. An extensive systems analysis dealt with seven areas: (1) residence hall community development; (2) individual student assistance (academic and non-academic); (3) educational programming; (4) staff functions; (5) time sequencing; (6) staff structure within the hall; and (7) measuring the effects of implementing 1-6 upon the hall environment. A training and development program extending over the full academic year was outlined and a report submitted to the Dean of Students and the Educational Development Program.

At present, the program is being implemented, including several revisions. One spin-off of the project has been the ability to screen potential staff through use of the system objectives. Having an explicit statement of hall operating procedures, student assistance, educational program, and staff responsibilities, it is much easier to select staff who will fit into the overall philosophy and framework which has been established.

For further information contact: Mr. Richard P. Stimpson, Director for Advisory Staff Affairs, McDonel Hall, Michigan State University, East Lansing, Michigan 48823.

III. Cumulative Index by Subject Matter

SUBJECT-MATTER AREA	REPORT	PAGE
AGRICULTURE		
Auto-tutorial instruction relates research and demonstration	#2	3
Experiment in self-instruction.	#3	3
AGRONOMY		
Audio-tutorial teaching in soil science.	#5	3
Mediated English counseling in field crops instructional system.	#6	3
ANATOMY		
Individual instruction in microscopic anatomy.	#5	3
ANIMAL SCIENCE		
Simultaneous teaching of animal science at multiple locations.	#6	3
ARCHITECTURE		
Photogrammetry offered in graduate architecture program.	#5	4
Coordinated design and drawing program for architecture.	#5	4
ART		
8-mm self-instructional films teach basic design skills	#3	3
Experimental teaching of studio humanities program.	#3	4
Photography in drawing-painting design.	#3	4
ART HISTORY		
New seminar approach to ancient art history.	#7	3
Self-paced modular units.	#8	3
BIOCHEMISTRY		
Developing the knowledge domain for teaching metabolism.	#7	3
BIOLOGY		
Self-study stations for laboratory instruction.	#1	3
Unified curriculum.	#1	3
Self-instructional Mini-courses.	#8	4
BOTANY		
Cinemicrotomic films for botany instruction.	#4	3
BUSINESS ADMINISTRATION		
Three-faceted approach for teaching accounting.	#2	3
Special program in accounting.	#3	5
Teaching-learning seminar for Ph.D. candidates in business administration.	#5	5

Audio tutorial decision theory.	#8	4
Simulating financial decision-making processes.	#8	5
Marketing and political action.	#8	6
CHEMISTRY		
Television in the general chemistry laboratory.	#3	6
Use of TV and VTR in undergraduate chemistry laboratory.	#4	3
Computer-based teaching of organic chemistry.	#7	4
CONSERVATION		
Integrated course in conservation education.	#3	7
COUNSELING		
Computer Assist Counseling (COASCON).	#6	4
DENTISTRY		
Single-concept films supplement instruction.	#2	4
CAI training course in periodontics.	#5	6
Self-evaluation of dental training through CAI simulation.	#7	5
Audiovisual and CAI programming in dental materials and dental hygiene.	#8	6
ECONOMICS		
Application of principles of programmed instruction to a televised course	#1	4
Teaching Information Processing System.	#3	7
New instrument for measuring student performance in economics.	#5	7
Simulation of a world economy.	#7	6
Computer test scoring and analysis.	#8	7
EDUCATION		
Systems approach in a professional course.	#1	5
Teaching and simulated teaching on video tape.	#1	6
In-service instruction via "tele-lecture."	#1	6
Radio-telephone networks for in-service instruction.	#1	6
Instructional system in teacher education.	#2	5
Tutorial and clinical program in teacher education.	#3	9
"Stimulus films" as a basis for teaching educational psychology.	#3	9
Internship for college teachers of education.	#4	4
Preparation of pre-service teacher-education students in educational research and development.	#4	5
Elementary school science-mathematics teaching laboratory.	#4	6
Project MODELS: an environment for increasing learning efficiency and conducting research and development.	#4	7
Special training for inner city school administrators.	#5	7

Iowa UPSTEP: a new program in science education.	#7	6
A self-instruction lab for the operation of AV equipment and production of simple instructional materials.	#8	8
A competency based reading instruction course.	#8	9
Improvement of college instruction in the school of agriculture.	#8	9
ENGINEERING		
Programmed instruction in pre-engineering graphics.	#1	7
Multimedia classroom for faculty-to-be.	#2	6
Computer use in mechanical engineering senior design program.	#3	11
Instructional use of the computer in civil engineering and hydraulics.	#3	11
Teaching keypunch operation via video tape.	#4	7
Educational films for electrical engineering.	#5	8
Use of network ITV for regional engineering programs.	#5	8
Advanced professional program in engineering.	#6	5
Computer graphics in electrical engineering.	#6	6
TV solves logistical problems in fluid mechanics lab.	#6	6
Individualized techniques applied to freshman engineering graphics.	#7	7
Interdisciplinary engineering studies.	#7	8
Use of tape recorders for grading engineering papers.	#7	8
New courses related to man and his environment.	#7	9
Oral exams and varied scheduling.	#8	10
Team teaching in short blocks.	#8	11
Technology and society.	#8	11
ENGLISH		
Individualized instruction in composition.	#1	8
Measurement and evaluation of English proficiency.	#1	8
Evaluation of written composition.	#2	7
Mediated English counseling in field crops instructional system.	#6	3
Film as literature.	#7	9
Reading skills laboratory for freshman comprehensive English course.	#7	10
Full-length feature-film adaptations to stimulate and improve reading of required texts and expository writing.	#8	12
New approaches to poetry and literary style.	#8	13
GEOGRAPHY		
Multimedia experiment in regional geography.	#5	9

GEOLOGY
Earth sciences lab uses audio-tutorial approach. #5 10

HISTORY
Introduction to the study of American history. #3 12
Discussion groups in large intermediate-level history courses. #8 14
Development of options in a history course. #8 15

HOME ECONOMICS
The textile self-instructional learning area. #6 7

INDUSTRIAL MANAGEMENT
Business opportunity program for inner city students. #6 8

JOURNALISM
Using new media for journalism instruction. #4 8
Specialized writing program for journalists. #5 11
A venture in journalistic simulation. #7 11

LANGUAGE
Self-instructional format for teaching Russian. #1 9
Multiple-credit elementary French course. #1 9
Research on improved methods of measuring proficiency. #1 10
Instructional materials for German and French. #1 10
System for teaching German in field trial. #2 8
New approaches to the teaching of Chinese. #4 9
A new course in Russian civilization. #7 12
A new German grammar #8 16
Hebrew language study with a programmed text and tape. #8 17

LAW
Audio-visual teaching aids in law. #5 11
Students work with city and state officials in two law seminars. #5 12
Clinical training in law #8 18

LIBRARY SCIENCE
Video tape and film use in library orientation. #1 11
Teaching an extension course via tele-lecture. #4 10
Realism in teaching reference work. #8 19

MATHEMATICS
Teaching algebra with programmed materials. #1 12
Support from main campus to branch college. #2 8
Programming beginning algebra. #3 13
Mathematics laboratory project for elementary teachers. #4 11
Computer instruction in mathematics. #7 12
Individualized instruction in mathematics. #7 13

MEDICINE

Computer simulations for instruction and evaluation.	#2	9
"Auto-didactic" laboratory.	#3	13
Continuing education for physicians.	#3	14
New programs in medical communications, circulation technology.	#6	9
MD training span reduced, patient care increased.	#6	10
Computer-assisted independent study in a pilot medical school.	#7	14
Intercalated Year Program in medicine.	#7	15
Self-instruction in pathology.	#7	15
Integrated premedical-medical program.	#8	19

MUSIC

Programmed unit added to theory sequence.	#2	10
Use of radio in music history course.	#5	12
An integrative teaching model in music education.	#7	16
CAI for music theory.	#8	20
An electronic piano laboratory for piano pedagogy.	#8	21

NATURAL RESOURCES

Computer simulation of fish populations.	#5	13

NURSING EDUCATION

Video tapes for teaching administration of medications.	#1	12
Programmed instruction in posology and immunity.	#1	13
Multimedia project in nursing.	#4	11
Multimedia learning system in nursing.	#6	10
Curricular flexibility in nursing education.	#8	22

PHARMACY

CCTV used for continuing pharmacy education.	#5	13
Continuing education in pharmacy via telecommunications network.	#5	14
Cassette tapes for an extension course.	#8	22

PHILOSOPHY

Philosopher seminar program.	#5	15
Graduate student teaching internship program in philosophy.	#7	17

PHYSICS

Computer use in the physics department.	#3	15
A graduate seminar in physics teaching.	#4	12
Evaluating student learning in simulated physics lab problem.	#5	15

PHYSIOLOGY
Programmed preparation laboratory. #2 11

POLICE SCIENCE
Educational programs for law enforcement agencies. #5 16
Hospital-based ambulance service. #5 17

POLITICAL SCIENCE
Simulation laboratory for inter-nation decision making. #1 14
Emphasis on problem-solving, broad discipline study. #2 12
Evaluation of televised course in American government. #2 13
Using multi-media in a large enrollment course. #8 23

PSYCHOLOGY
"Psychology of college teaching," new course at Purdue. #1 15
Computer assisted instruction. #1 15
Project OUTREACH. #2 14
Video-tape lectures. #2 14
Experimental course laboratory in a mental hospital. #3 16
A seminar in the teaching of psychology. #4 13
Using TV to instigate class discussion. #4 14
Introductory psychology for inner city blacks. #6 12
Cafeteria of learning for introductory psychology. #7 18
Observing interpersonal behavior via videotape recording. #7 19
Teaching students sensitivity to children. #7 19
Computer simulations for teaching research design in elementary experimental psychology. #8 24
Videotapes combined with discussions. #8 24
A test item pool designed to stimulate and measure creative thinking in psychology. #8 25

SOCIAL WORK
Self-instructional program to teach interviewing skills. #1 17
Interviewing techniques evaluated via video tape. #5 17
Self-instruction slide/tape presentations to introduce social work students to community services. #8 26

SOCIOLOGY
Educational games in social psychology. #2 15
A developing sequence of integrated statistics and methods. #4 15

SPEECH

Peer group ratings, televised lectures facilitate handling of increased enrollment.	#2	16
Video tape and social action in discussion.	#3	16
Computerized evaluation and simulation of group discussion processes.	#4	15
Evaluation of learning in introductory speech.	#5	18
Video-taped informative speech models.	#5	19

TELEVISION/RADIO

Revising broadcasting course through task analysis.	#6	13

UNIVERSITY-WIDE ACTIVITIES

ADMINISTRATION, ACADEMIC FACILITIES

Experimental college at Michigan State.	#1	21
Coordination of learning, media, and evaluation services.	#1	21
Support for departmental self study.	#1	22
The Pilot Project.	#2	19
Faculty awards for improvement of undergraduate instruction.	#3	21
Center for Research on Learning and Teaching.	#4	19
College within a college.	#4	19
"Credit by exam" offered in experimental program.	#4	20
Pass-fail grading experiment.	#4	21
Summer grants to improve instruction.	#4	22
Special educational opportunities program.	#5	23
Bachelor of general studies degree.	#6	17
New careers and new dimensions programs.	#6	18
Special programs for the disadvantaged.	#6	18
Centralized learning and information office.	#7	23
Educational Development Fund.	#7	23
Pilot Program at The University of Michigan.	#7	24
Undergraduate education curriculum development.	#7	25
University of Illinois' Commission for the Reform of Undergraduate Education and Living.	#7	26
University of Wisconsin Undergraduate Teaching Improvement Fund.	#8	29
An experimenting college.	#8	30

AUTOMATION AND TECHNOLOGY

Library of non-print instructional materials.	#1	23
Dial-access learning system.	#2	19
CAI introduced at Purdue.	#2	20
TV network links two universities and extension campuses.	#2	21
Systems approach for extension campus.	#2	22
Off-campus graduate center gets AV links.	#2	23
Computer-based education research laboratory.	#3	21

Decentralized instructional television.	#3	22
Minnesota television feasibility study.	#3	23
Video tape recordings of classroom lectures as device to critique conventional teaching performance.	#3	24
Dial-access video and audio learning system.	#4	22
Educational telephone network as a vehicle for college instruction.	#4	23
Instructional media laboratory.	#4	24
Modular film design for media study and teacher education.	#4	25
Library with an electronic dimension.	#5	23
Multimedia instruction in extension.	#5	24
On-line computer system for instruction.	#5	25
INTERDISCIPLINARY PROGRAMS		
University-wide curriculum revision.	#1	24
Seminar for professors to consider science-values issue.	#2	23
Behavioral sciences lab is "active learning" center.	#2	24
Arts and sciences course taught in foreign languages.	#3	25
Honors humanities core for freshmen.	#3	25
Center for Curriculum Studies.	#4	26
Institutes action study program.	#4	27
Instructional development project.	#4	27
Field study in the city.	#5	26
FOCUS: BLACK AMERICA.	#5	27
A center for the teaching professions.	#6	20
Interdisciplinary course in freshman perspectives.	#6	21
Interdisciplinary approach to urban problems.	#6	21
The social science program at Minnesota.	#6	22
Rural adult education program.	#7	26
The Project Community at The University of Michigan.	#7	27
Course Mart.	#8	31
MEASUREMENT AND EVALUATION		
Course-evaluation questionnaire.	#1	25
Testing and rostering for large classes.	#1	25
Controlled study of examination forms and procedures.	#2	25
New instructional rating report.	#2	26
Faculty seminar in evaluation of learning and teaching.	#5	27
Instructor rating scales.	#5	28
Freshmen placement and proficiency system.	#6	24
Student instructional rating system.	#6	25
Course and instructor evaluation.	#7	28
Computer generated repeatable testing for large university classes.	#8	32

TEACHING ASSISTANTS		
Plan to maintain teaching standards.	#1	24
Broad-scale study of TA role.	#2	27
Training prospective college teachers.	#3	27
System training program for graduate teaching assistants.	#5	29
Seminar on college teaching.	#7	29
Residence hall training program.	#8	33
PROGRAMMED INSTRUCTION		
A programmed course in programming.	#5	29

IV. Cumulative Index by Category

I. NEW INSTRUCTIONAL MEDIA	REPORT	PAGE
A. MULTIMEDIA		
A self-instruction laboratory for the operation of AV equipment and production of simple instructional materials (Education)	#8	8
Audio-tutorial teaching in soil science (Agronomy)	#5	3
Audiovisual and CAI programming in dental materials and dental hygiene (Dentistry)	#8	6
Auto-didactic laboratory (Medicine)	#3	13
Auto-tutorial instruction relates research and demonstration (Agriculture)	#2	3
Earth sciences lab uses audio-tutorial approach (Geology)	#5	10
Experimental teaching of studio humanities program (Art)	#3	4
Experiment in self-instruction (Agriculture)	#3	3
Improvement of college instruction in the school of agriculture (Education)	#8	9
Individual instruction in microscopic anatomy (Anatomy)	#5	3
Individualized techniques applied to freshman engineering graphics (Engineering)	#7	7
Library with an electronic dimension (Automation and Technology)	#5	23
Multimedia classroom for faculty-to-be (Engineering)	#2	6
Multimedia experiment in regional geography (Geography)	#5	9
Multimedia instruction in extension (Automation and technology)	#5	24
Multimedia learning system in nursing (Nursing)	#6	10
Multimedia project in nursing (Nursing Education)	#6	10
Reading skills laboratory for freshman comprehensive English courses (English)	#7	10
Self-instruction slide-tape presentations to introduce social work students to community services (Social Work)	#8	26
Self-instructional mini-courses (Biology)	#8	4
Self-study stations for laboratory instruction (Biology)	#1	3
Simultaneous teaching of animal science at multiple locations (Animal Science)	#6	3
Systems approach in a professional course (Education)	#1	5
Textile self-instructional learning area (Home Economics)	#6	7
Three-faceted approach to teaching accounting (Business Administration)	#2	3
Using multi-media in a large enrollment course (Political Science)	#8	23

B. Film

Cinemicrotomic films for botany instruction (Botany)	#4	3
Educational films for electrical engineering (Engineering)	#5	8
8-mm self-instructional films teach basic design skill (Art)	#3	3
Film as literature (English)	#7	9
Full-length feature-film adaptations to stimulate and improve reading of required texts and expository writing (English)	#8	12
Library of non-print instructional material (Automation and Technology)	#1	23
Modular film design for media study and teacher education (Automation and Technology)	#4	25
New approaches to the teaching of Chinese (Language)	#4	9
Photography in drawing-painting instruction (Art)	#3	4
Single-concept films supplement instruction (Dentistry)	#2	4
"Stimulus-films" as a basis for teaching educational psychology (Education)	#3	9
Video tape and film use in library orientation (Library Science)	#1	23

C. Video Tape Recorders

Audio-visual aids in law (Law)	#5	11
Dial-access video and audio learning system (Automation and Technology)	#4	22
Evaluation of learning in introductory speech (Speech)	#5	18
In-service instruction via "tele-lecture" (Education)	#1	6
Interviewing techniques evaluated via video tape (Social Work)	#5	17
Observing interpersonal behavior via videotape recording (Psychology)	#7	19
Support from main campus to branch colleges (mathematics)	#2	8
System training program for graduate teaching assistants (Teaching Assistants)	#5	29
Teaching and simulated teaching on video tape (Education)	#1	6
Teaching an extension course by tele-lecture (Library Science)	#4	10
Teaching keypunch operation via video tape (Engineering)	#4	7
Teaching students sensitivity to children (Psychology)	#7	19
Use of TV and VTR in undergraduate chemistry laboratory (Chemistry)	#3	6
Video tape and film use in library orientation (Library Science)	#1	11
Video tape and social action in discussion (Speech)	#3	16

Video tape lectures (Psychology)	#2	14
Video tape recordings of classroom lectures as a device to critique conventional teaching performance (Automation and Technology)	#3	24
Video tape informative speech models (Speech)	#5	19
Video tapes combined with discussions (Psychology)	#8	24
Video tapes for teaching administration of medications (Nursing Education)	#1	12

D. PROGRAMMED INSTRUCTION

A developing sequence of integrated statistics and methods (Sociology)	#4	15
Application of principles of programmed instruction to a televised course (Economics)	#1	4
Computer Assist Counseling (COASCON) (Counseling)	#6	4
Hebrew language study with a programmed text and tape (Language)	#8	17
New approaches to poetry and literary study (English)	#8	13
Programmed course in programming (Programmed Instruction)	#5	29
Programmed instruction in posology and immunity (Nursing Education)	#1	13
Programmed instruction in pre-engineering graphics (Engineering)	#1	7
Programmed preparation laboratory (Physiology)	#2	11
Programmed unit added to theory sequence (Music)	#2	10
Programming beginning algebra (Mathematics)	#3	13
Self-instructional format for teaching Russian (Language)	#1	9
Self-instructional program to teach interviewing skills (Social Work)	#1	17
Self-instruction in pathology (Medicine)	#7	15
Self-paced modular units (Art History)	#8	3
Teaching algebra with programmed materials (mathematics)	#1	11
Using new media for journalism instruction (Journalism)	#4	8

E. TELEVISION

Application of principles of programmed instruction to a televised course (Economics)	#1	4
CCTV used for continuing pharmacy education (Pharmacy)	#5	13
Continuing education in pharmacy via tele-communications network (Pharmacy)	#5	14
Decentralized instructional television (Automation and Technology)	#3	22
Evaluation of a televised course in American government (Political Science)	#2	13
Minnesota television feasibility study (Automation and Technology)	#3	23

Off-campus graduate center gets AV link (Automation and Technology)	#2	23
Peer group ratings and televised lectures facilitate handling of increased enrollment (Speech)	#2	16
Television in general chemistry lab (Chemistry)	#3	6
TV network links two universities and extension campuses (Automation and Technology)	#2	21
TV solves logistical problems in fluid mechanics lab (Engineering)	#6	6
Use of network ITV for regional engineering programs (Engineering)	#5	8
Use of TV and VTR in undergraduate chemistry laboratory (Chemistry)	#4	3
Using TV to instigate class discussion (Psychology)	#4	14

F. COMPUTER

A new German grammar (Language)	#8	16
Audiovisual and CAI programming in dental materials and dental hygiene (Dentistry)	#8	6
CAI for music theory (Music)	#8	20
CAI introduced at Purdue (Automation and Technology)	#2	20
CAI training course in periodontics (Dentistry)	#5	6
Computer Assist Counseling (COASCON) (Counseling)	#6	4
Computer-assisted independent study in a pilot medical school (Medicine)	#7	14
Computer assisted instruction (Psychology)	#1	15
Computer-based education research laboratory (Automation and Technology)	#3	21
Computer-based teaching of organic chemistry (Chemistry)	#7	4
Computer generated repeatable testing for large university classes (Measurement and Evaluation)	#8	32
Computer graphics in electrical engineering (Engineering)	#6	6
Computer instruction in mathematics (Mathematics)	#7	12
Computer simulations for instruction and evaluation (Medicine)	#2	9
Computer simulations for teaching research design in elementary experimental psychology (Psychology)	#8	24
Computer simulation of fish populations (Natural Resources)	#5	13
Computer test scoring and analysis (Economics)	#8	7
Computer use in mechanical engineering senior design program (Engineering)	#3	10
Computer use in physics department (Physics)	#3	15
Computerized evaluation and simulation of group discussion processes (Speech)	#4	15
Evaluating student learning in simulated physics laboratory problem (Physics)	#5	15

Instructional use of the computer in civil engineering and hydraulics (Engineering)	#3	11
On-line computer system for instruction (Automation and Technology)	#5	25
Self-evaluation of dental training through CAI simulation (Dentistry)	#7	5
Simulation of a world economy (Economics)	#7	6
Teaching information processing system (Economics)	#3	7
Team teaching in short blocks (Engineering)	#8	11

G. MISCELLANEOUS

A venture in journalistic simulation (Journalism)	#7	11
An electronic piano laboratory for piano pedagogy (Music)	#8	21
Audio-tutorial decision theory (Business Administration)	#8	4
Cassette tapes for an extension course (Pharmacy)	#8	22
Dial-access learning system (Automation and Technology)	#2	19
Dial-access video and audio learning system (Automation and Technology)	#4	22
Educational games in social psychology (Psychology)	#2	15
Educational telephone network as a vehicle in college instruction (Automation and Technology)	#4	23
Instructional materials for German and French (Language)	#1	10
Mediated English counseling in field crops instructional system (Agronomy)	#6	3
New approaches to the teaching of Chinese (Language)	#4	9
New seminar approach to ancient art history (Art History)	#7	3
Radio-telephone networks for in-service instruction (Education)	#1	6
Realism in teaching reference work (Library Science)	#8	19
Self-instruction slide-tape presentations to introduce social work students to community services (Social Work)	#8	26
Self-instructional format for teaching Russian (Language)	#1	9
Simulation laboratory for inter-nation decision making (Political Science)	#1	14
System for teaching German in field trial (Language)	#2	8
Systems approach for extension campus (Automation and Technology)	#2	22
Use of radio in music history course (Music)	#5	12
Use of tape recorders for grading engineering papers (Engineering)	#7	8

II. CURRICULUM REVISION OR RESTRUCTURE

A competency based reading instruction course (Education)	#8	9
A developing sequence of integrated statistics and methods (Sociology)	#4	15
A new course in Russian civilization (Language)	#7	12
A venture in journalistic simulation (Journalism)	#7	11
Advanced professional program in engineering (Engineering)	#6	5
An experimenting college (Administration, Academic Facilities)	#8	30
An integrated teaching model in music education (Music)	#7	16
Arts and sciences course taught in foreign languages (Interdisciplinary Programs)	#3	25
Behavioral sciences lab is "active learning" center (Interdisciplinary Programs)	#2	24
Business opportunity program for inner city students (Industrial Management)	#6	8
Cafeteria of learning for introductory psychology (Psychology)	#7	18
Center for curriculum studies (Interdisciplinary Programs)	#4	26
Continuing education for physicians (Medicine)	#3	14
Coordinated design and drawing program for architecture (Architecture)	#5	4
Course Mart (Interdisciplinary Programs)	#8	31
Curricular Flexibility in nursing education (Nursing Education)	#8	22
Development of options in a history course (History)	#8	15
Developing the knowledge domain for teaching metabolism (Biochemistry)	#7	3
Discussion groups in large intermediate-level History courses (History)	#8	14
Educational programs for law enforcement agencies (Police Science)	#5	16
Elementary school science-mathematics teaching laboratory (Education)	#4	6
Emphasis on problem-solving, broad discipline study (Political Science)	#2	12
Experimental course laboratory in a mental hospital (Psychology)	#3	16
Faculty seminar in evaluation of learning and teaching (Measurement and Evaluation)	#5	27
Field study in the city (Interdisciplinary Programs)	#5	26
Film as literature (English)	#7	9
Field study in the city (Interdisciplinary Programs)	#5	26
FOCUS: BLACK AMERICA (Interdisciplinary Programs)	#5	27
Graduate seminar in physics teaching (Physics)	#4	12
Hebrew language study with a programmed text and tape (Language)	#8	17

Honors humanities core for freshmen (Interdisciplinary Programs)	#3	26
Hospital-based ambulance service (Police Science)	#5	17
Individualized instruction in composition (English)	#1	8
Individualized instruction in mathematics (Mathematics)	#7	13
Institutes action study program (Interdisciplinary Programs)	#4	27
Instructional development seminar (Interdisciplinary Programs)	#4	27
Instructional system in teacher education (Education)	#2	5
Integrated course in conservation education (Conservation)	#3	7
Integrated premedical-medical program (Medicine)	#8	19
Intercalated year program in medicine (Medicine)	#7	15
Interdisciplinary approach to urban problems (Interdisciplinary Programs)	#6	21
Interdisciplinary course in freshmen perspectives (Interdisciplinary Programs)	#6	21
Interdisciplinary engineering studies (Engineering)	#7	8
Introduction to the study of American history (History)	#3	12
Introductory psychology for inner city blacks (Psychology)	#6	12
Iowa UPSTEP: A new program in science education (Education)	#7	6
Marketing and political action (Business Administration)	#8	6
Mathematics laboratory project for elementary teachers (Mathematics)	#4	11
MD training span reduced, patient care increased (Medicine)	#6	10
Multiple-credit elementary French course (Language)	#1	9
New approaches to poetry and literary study (English)	#8	13
New careers and new dimensions programs (Administration, Academic Facilities)	#6	18
New courses related to man and his environment (Engineering)	#7	9
New programs in medical communications, circulation technology (Medicine)	#6	9
New seminar approach to ancient art history (Art)	#7	3
Philosopher seminar program (Philosophy)	#5	15
Photogrammetry offered in graduate architecture program (Architecture)	#5	4
Preparation of pre-service teacher-education students in educational R&D (Education)	#4	5
Project OUTREACH (Psychology)	#2	14
"Psychology of college teaching" (Psychology)	#1	15
Reading skills laboratory for freshman comprehensive English courses (English)	#7	10

Revising broadasting course through task analysis (Television/Radio)	#6	13
Rural adult education program (Interdisciplinary Programs)	#7	26
Self-instruction in pathology (Medicine)	#7	15
Seminar for professors to consider science-values issue (Interdisciplinary Programs)	#2	23
Seminar in the teaching of psychology (Psychology)	#4	13
Social science program at Minnesota (Interdisciplinary Programs)	#6	22
Special program in accounting (Business Administration)	#3	5
Special programs for the disadvantaged (Administration, Academic Facilities)	#6	18
Specialized writing program in journalism (Journalism)	#5	11
Students work with city and state officials in two law seminars (Law)	#5	12
Teaching and learning seminar for Ph.D. candidates in business administration (Business Administration)	#5	5
Teaching students sensitivity to children (Psychology)	#7	19
Technology and society (Engineering)	#8	11
The Project Community (Interdisciplinary Programs)	#7	27
Tutorial and clinical program in teacher education (Education)	#3	9
Unified curriculum (Biology)	#1	3
University-wide curriculum revision (Interdisciplinary Programs)	#1	24

III. TRAINING

A self-instruction lab for the operation of AV Equipment and production of simple instructional materials (Education)	#8	8
Advanced professional program in engineering (Engineering)	#6	5
Cassette tapes for an extension course (Pharmacy)	#8	22
Clinical training in law (Law)	#8	18
Hospital-based ambulance service (Police Science)	#5	17
Improvement of college instruction in the school of agriculture (Education)	#8	9
Instructional system in teacher education (Education)	#2	5
Internship for college teachers of education (Education)	#4	4
Iowa UPSTEP: A new program in science education (Education)	#7	6
MD training span reduced, patient care increased (Medicine)	#6	10
New programs in medical communications, circulation technology (Medicine)	#6	9

Realism in teaching reference work (Library (Science)	#8	19
Residence hall training program (Teaching Assistants)	#8	33
Self-evaluation of dental training through CAI simulation (Dentistry)	#7	5
Special training for inner city school administrators (Education)	#5	7
Team teaching in short blocks (Engineering)	#8	11
Tutorial and clinical program in teacher education (Education)	#3	9

IV. TEACHING ASSISTANTS

Broad-scale study of TA role (Teaching Assistants)	#2	27
Discussion groups in large intermediate-level history courses (History)	#8	14
Graduate student teaching internship program in philosophy (Philosophy)	#7	17
Plan to maintain teaching standards	#1	24
Residence hall training program (Teaching Assistants)	#8	33
Seminar on college teaching (Teaching Assistants)	#7	29
System training program for graduate teaching assistants (Teaching Assistants)	#5	29
Training prospective college teachers	#3	27

V. TESTING AND EVALUATION

A test item pool designed to stimulate and measure creative thinking in psychology (Psychology)	#8	25
Computerized evaluation and simulation of group discussion processes (Speech)	#4	15
Computer generated repeatable testing for large university classes (Measurement and Evaluation)	#8	32
Computer simulation for instruction and evaluation (Medicine)	#2	9
Computer test scoring and analysis (Economics)	#8	7
Controlled study of examination forms and procedures (Measurement and Evaluation)	#2	25
Course and instructor evaluation (Measurement and Evaluation)	#7	28
Course evaluation questionnaire (Measurement and Evaluation)	#1	25
"Credit by exam" offered in experimental program (Administration, Academic Facilities)	#4	20
Development of options in a history course (History)	#8	15
Developing the knowledge domain for teaching metabolism (Biochemistry)	#7	3
Evaluating student learning in simulated physics laboratory problem (Physics)	#5	15

Evaluation of learning in introductory speech (Speech)	#5	18
Evaluation of televised course in American government (Political Science)	#2	13
Evaluation of written composition (English)	#2	7
Faculty seminar in evaluation of learning and teaching (Measurement and Evaluation)	#5	27
Individualized techniques applied to freshman engineering graphics(Engineering)	#7	7
Instructor rating scales (Measurement and Evaluation)	#5	28
Interviewing techniques evaluated using video tape (Social Work)	#5	17
Measurement and evaluation of English proficiency (English)	#1	8
Modular film for media study and teacher education (Automation and Technology)	#4	25
New instructional rating report (Measurement and Evaluation)	#2	26
New instrument for measuring student performance in economics (Economics)	#5	7
Oral exams and varied scheduling (Engineering)	#8	10
Pass-fail grading experiment (Administration, Academic Facilities)	#4	21
Peer group ratings, televised lectures facilitate handling of increased enrollments (Speech)	#2	16
Research on improved methods measuring proficiency and achievement in modern languages (Language)	#1	10
Revising broadcasting course through task analysis (Television/Radio)	#6	13
Self-evaluation of dental training through CAI simulation (Dentistry)	#7	5
Self-instructional mini-courses (Biology)	#8	4
Simulation of a world economy (Economics)	#7	6
Student instructional rating system (Measurement and Evaluation)	#6	25
Support for departmental self-study (Administration, Academic Facilities)	#1	22
Testing and rostering for large classes (Measurement and Evaluation)	#1	25
TV solves logistical problem in fluid mechanics lab (Engineering)	#6	6
Video tape recordings of classroom lectures as a device to critique conventional teaching performance (Automation and Technology)	#3	24

VI. ADMINISTRATION

An experimenting college (Administration, Academic Facilities)	#8	30
Bachelor of general studies degree (Administration, Academic Facilities)	#6	17
Center for curriculum studies (Interdisciplinary Programs)	#4	26

Center for Research on Learning and Teaching (Administration, Academic Facilities)	#4	19
Centralized learning and information office (Administration, Academic Facilities)	#7	23
College within a college (Administration, Academic Facilities)	#4	19
Coordination of learning, media and evaluation services (Administration, Academic Facilities)	#1	21
Course Mart (Interdisciplinary Programs)	#8	31
"Credit by exam" offered in experimental program (Administration, Academic Facilities)	#4	20
Educational Development Fund (Administration, Academic Facilities)	#7	23
Experimental college at MSU (Administration, Academic Facilities)	#1	21
Faculty awards for improvement of undergraduate instruction (Administration, Academic Facilities)	#3	21
Institutes action study program (Interdisciplinary Programs)	#4	27
Instructional media laboratory (Automation and Technology)	#4	24
Multiple credit elementary French course (Language)	#1	9
New careers and new dimensions programs (Administration, Academic Facilities)	#6	18
Pass-fail grading experiment (Administration, Academic Facilities)	#4	21
Peer group ratings, TV lecture (Speech)	#2	16
Pilot Program at the University of Michigan (Administration, Academic Facilities)	#7	24
The pilot project (Administration, Academic Facilities)	#2	19
Social service program at Minnesota (Interdisciplinary Programs)	#6	22
Special educational opportunities program (Administration, Academic Facilities)	#5	23
Special programs for the disadvantaged (Administration, Academic Facilities)	#6	18
Support for departmental self-study (Administration, Academic Facilities)	#1	22
Summer grants to improve instruction (Administration, Academic Facilities)	#4	22
Undergraduate education curriculum development (Administration, Academic Facilities)	#7	25
University of Illinois' Commission for the Reform of Undergraduate Education and Living (Administration, Academic Facilities)	#7	26
University of Wisconsin Undergraduate Teaching Improvement Fund (Administration, Academic Facilities)	#8	29
University-wide curriculum revision (Interdisciplinary Programs)	#1	24